

What Is Claimed Is:

1. A semiconductor manufacturing method, comprising the steps of:

5 exchanging a substrate between a preliminary chamber and the outside;

subjecting the substrate to a predetermined processing in a process chamber;

10 transferring the substrate through a transfer chamber provided between said preliminary chamber and said process chamber; and

supplying and exhausting an inert gas to and from at least the chamber in which the substrate is present among said chambers during the transfer of said substrate.

15

2. A semiconductor manufacturing method, comprising the steps of:

exchanging a substrate between a preliminary chamber and the outside;

20 subjecting the substrate to a predetermined processing in a process chamber;

transferring the substrate through a transfer chamber provided between said preliminary chamber and said process chamber; and

25 supplying and exhausting an inert gas to and from all of said chambers during the transfer of said substrate.

3. A semiconductor manufacturing method, comprising the steps of:

exchanging a substrate between a preliminary chamber and
the outside;

subjecting the substrate to a predetermined processing in
a process chamber;

A1
5 transferring the substrate through a transfer chamber
provided between said preliminary chamber and said process
chamber; and

supplying and exhausting an inert gas to and from at
least the chamber equipped with a vacuum pump among said
10 chambers during the transfer of said substrate.

4. The semiconductor manufacturing method according to
Claim 1, wherein the exchange of the substrate between said
preliminary chamber and the outside is carried out with a
15 cassette that holds a plurality of substrates.

5. The semiconductor manufacturing method according to
Claim 1, wherein the predetermined processing to which the
substrate is subjected in said process chamber is HSG
20 formation or epitaxial growth.

6. A substrate processing method, comprising the steps
of:

sub
A2
25 exchanging a substrate between a preliminary chamber and
the outside;

subjecting the substrate to a predetermined processing in
a process chamber;

A2
transferring the substrate through a transfer chamber
provided between said preliminary chamber and said process
chamber; and

supplying and exhausting an inert gas to and from at
5 least the chamber in which the substrate is present among said
chambers during the transfer of said substrate.

7. A semiconductor manufacturing apparatus, comprising:
a preliminary chamber from and to which a substrate is
10 exchanged with the outside;

a process chamber in which the substrate is subjected to
a predetermined processing;

a transfer chamber in which the substrate is transferred
between said preliminary chamber and the process chamber by a
15 built-in transfer robot;

inert gas supply portion provided to each of said
chambers that supplies an inert gas into the corresponding
chamber;

gas exhaust portion provided to each of said chambers
20 that exhausts the gas from the corresponding chamber; and

controller that controls said inert gas supply portion
and gas exhaust portion and thereby supplying and exhausting
an inert gas to and from at least the chamber in which the
substrate is present during the transfer of said substrate.

25

8. The semiconductor manufacturing apparatus according
to Claim 7, wherein said preliminary chamber is a cassette
chamber into which is transferred a cassette that holds a
plurality of substrates.